

# INTERNATIONAL SEARCH REPORT

Inter-Application No  
PC 2004/039617

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K16/28 C07K19/00 C12N15/13 C12N15/62 A61K39/395  
C07K14/21 A61K47/48

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS, EMBASE, Sequence Search

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 03/027135 A (THE GOVERNMENT OF THE UNITED STATES, AS REPRESENTED BY THE SECRETARY O) 3 April 2003 (2003-04-03) the whole document	1-74
Y	SALVATORE G ET AL: "Improved cytotoxic activity cell lines and fresh leukemia cells of a mutant anti-CD22 immunotoxin obtained by antibody phage display" CLINICAL CANCER RESEARCH, THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, US, vol. 8, April 2002 (2002-04), pages 995-1002, XP002971541 ISSN: 1078-0432 the whole document	1-74

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

29 April 2005

Date of mailing of the international search report

23.08.2005

Name and mailing address of the ISA

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CHOWDHURY P S ET AL: "IMPROVING ANTIBODY AFFINITY BY MIMICKING SOMATIC HYPERMUTATION IN VITRO" NATURE BIOTECHNOLOGY, NATURE PUB. CO, NEW YORK, NY, US, vol. 17, June 1999 (1999-06), pages 568-572, XP000918985 ISSN: 1087-0156 the whole document	1-74
Y	WO 00/73346 A (THE GOVERNMENT OF THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE) 7 December 2000 (2000-12-07) the whole document	1-74
Y	BEERS R ET AL: "Immunotoxins with increased activity against epidermal growth factor receptor viii-expressing cells produced by antibody phage display" CLINICAL CANCER RESEARCH, THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, US, vol. 6, no. 7, July 2000 (2000-07), pages 2835-2843, XP002176480 ISSN: 1078-0432 the whole document	1-74
T	HO MITCHELL ET AL: "In vitro antibody evolution targeting germline hot spots to increase activity of an anti-CD22 immunotoxin." THE JOURNAL OF BIOLOGICAL CHEMISTRY. 7 JAN 2005, vol. 280, no. 1, 7 January 2005 (2005-01-07), pages 607-617, XP002326657 ISSN: 0021-9258 the whole document	

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In ional application No.  
CT/US2004/039617

## Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 53-63 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-74

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

**1. claims: 1-74**

An antibody that specifically binds CD22, said anti-CD22 antibody having a variable light (VL) chain comprising three complementary determining regions designated CDRs 1, 2, and 3, wherein said CDR1 has a sequence selected from the group consisting of SEQ ID NO: 7, 8, 9, and 10; and subject-matter related thereto.

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**2. claims: 75-105**

A Pseudomonas exotoxin A or a cytotoxic fragment or mutant thereof, wherein said PE has a glycine, alanine, valine, leucine, or isoleucine in place of arginine at the position corresponding to position 490 of SEQ ID NO: 24; and subject-matter related thereto.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC :004/039617

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03027135	A	03-04-2003	CA 2461351 A1	03-04-2003
			EP 1448584 A2	25-08-2004
			WO 03027135 A2	03-04-2003
			US 2005118182 A1	02-06-2005
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WO 0073346	A	07-12-2000	AU 5303700 A	18-12-2000
			CA 2374398 A1	07-12-2000
			EP 1180123 A1	20-02-2002
			JP 2003502030 T	21-01-2003
			MX PA01011950 A	06-05-2002
			WO 0073346 A1	07-12-2000
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